

Claims

- [c1] 1. A control cable adjustment device for adjusting a control cable extending between a control mechanism and an operating mechanism, the adjustment device comprising:
- an adjuster rotatably connected to a housing of the operating mechanism such that the adjuster is axially movable relative to the housing in response to rotation of the adjuster;
 - a spring element having a retention segment and a spring segment; and
 - a detent contour on the adjuster,
- the retention segment of the spring element engageable with the detent contour to retain the adjuster in a current position and the spring segment of the spring element engaged with a movable member of the control mechanism.
- [c2] 2. The control cable adjustment device of claim 1, wherein the spring element is a wireform spring, the retention segment of the spring extending substantially parallel to a portion of the control cable extending through the adjuster.

- [c3] 3. The control cable adjustment device of claim 1, wherein the retention segment indexes the adjuster and the spring segment biases one of a release lever of a shifter and a brake lever toward a neutral position.
- [c4] 4. The control cable adjustment device of claim 1, wherein the detent contour extends along an interior surface of the adjuster.
- [c5] 5. The control cable adjustment device of claim 1, wherein the retention segment is braced torsionally against the housing, and a deflection motion of the retention segment is in the radial direction.
- [c6] 6. The control cable adjustment device of claim 1, wherein the spring element is guided through the housing, and the retention segment is braced against the housing near the adjuster.
- [c7] 7. The control cable adjustment device of claim 1, wherein the detent contour extends along an interior surface of the adjuster and has a non-round cross section and is configured such that the retention segment has freedom to deflect, the retention segment configured to extend substantially parallel with a portion of the control cable extending through the adjuster.

- [c8] 8. The control cable adjustment device of claim 1, wherein the detent contour extends along an interior surface of the adjuster and has flutes extending in an axial direction of the adjuster.
- [c9] 9. The control cable adjustment device of claim 1, wherein the adjuster has a continuous periphery and a thread for matingly engaging the housing, the detent contour extending along an interior surface of the adjuster and coaxially with the adjuster thread.
- [c10] 10. The control cable adjustment device of claim 1, wherein the adjuster has a control cable insertion slot that is offset from a portion of the control cable extending through the adjuster so that the spring element is prevented from entering the control cable insertion slot.
- [c11] 11. The control cable adjustment device of claim 1, wherein the radial motion of the retention segment of the spring element is restricted by at least one stop located in the housing for preventing the spring element from entering the control cable insertion slot.
- [c12] 12. The control cable adjustment device of claim 2, wherein the retention segment includes at least two flexible segments extending substantially parallel to a portion of the control cable extending through the adjuster,

the two flexible segments engaging an inner surface of the detent contour of the adjuster, the two flexible segments preloaded in the radial direction.

[c13] 13. The control cable adjustment device of claim 12, wherein upon rotation of the adjuster, the flexible segments are braced against the housing near the adjuster.

[c14] 14. The control cable adjustment device of claim 1, wherein the detent contour extends along an interior surface of the adjuster and the detent contour includes varying surfaces configured to engage the retention segment such that rotation of the adjuster in a first direction requires a higher rotational force than rotation of the adjuster in a second direction.

[c15] 15. A control cable adjustment device for adjusting a control cable extending between a control mechanism and an operating mechanism, the adjustment device comprising:
an adjuster rotatably connected to a housing of the operating mechanism such that the adjuster is axially movable relative to the housing in response to rotation of the adjuster; and
a detent mechanism including a detent contour extending along an interior surface of the adjuster and a spring element having at least one retention segment and a

support segment, the retention segment of the spring element engageable with the detent contour and the support segment of the spring element braced against the housing.

- [c16] 16. The control cable adjustment device of claim 15, wherein the detent contour has a non-round cross section and is configured such that the retention segment has freedom to deflect, the retention segment configured to extend substantially parallel with a portion of the control cable extending through the adjuster.
- [c17] 17. The control cable adjustment device of claim 15, wherein the detent contour includes varying surfaces configured to engage the retention segment such that rotation of the adjuster in a first direction requires a higher rotational force than rotation of the adjuster in a second direction.
- [c18] 18. The control cable adjustment device of claim 15, wherein the detent contour has flutes extending in an axial direction of the adjuster.
- [c19] 19. The control cable adjustment device of claim 15, wherein the retention segment includes at least two flexible segments extending substantially parallel to a portion of the control cable extending through the adjuster,

the two flexible segments engaging the inner surface of the detent contour of the adjuster, the two flexible segments preloaded in the radial direction.

- [c20] 20. The control cable adjustment device of claim 19, wherein the housing includes a control cable insertion slot and the support segment of the spring element is braced in the control cable insertion slot.
- [c21] 21. The control cable adjustment device of claim 15, wherein the retention segment and the support segment of the spring element are loaded primarily flexurally.
- [c22] 22. The control cable adjustment device of claim 15, wherein the adjuster has a continuous periphery and a thread for matingly engaging the housing, the detent contour extends along an interior surface of the adjuster and coaxially with the adjuster thread.
- [c23] 23. The control cable adjustment device of claim 15, wherein the adjuster has a control cable insertion slot that is offset from a portion of the control cable extending through the adjuster so that the spring element is prevented from entering the control cable insertion slot.
- [c24] 24. The control cable adjustment device of claim 15, wherein the radial motion of the retention segment of the spring element is restricted by at least one stop lo-

cated in the housing for preventing the spring element from entering the control cable insertion slot.